

NORTH PACIFIC OCEAN, MARCH 1939

By WILLIS E. HURD

Atmospheric pressure.—Over the central and eastern Aleutian region, pressures averaged high for the month in 1939, the means for Dutch Harbor, 29.95 inches, and for St. Paul in the Bering Sea, 29.99, being about 0.25 inch above the normal. The daily pressure range at these stations was unusually great, with extremes at St. Paul of 30.62 inches on the 31st and 28.32 inches on the 27th. The Aleutian Low, as an average for the month, had two centers, one over the western part of the Gulf of Alaska (Kodiak, 29.72); the other over extreme northwestern Pacific waters (Petropavlosk, 29.71). The lowest barometer readings of the month, 28.11 to 28.19 inches, were reported by ships along the northern routes southwest of the Aleutian Islands from the 23d to the 26th.

The center of the North Pacific anticyclone was situated on the average a short distance west of the California coast. The anticyclone off the China coast showed the usual spring decrease in strength.

TABLE 1.—Averages, departures, and extremes of atmospheric pressure at sea level, North Pacific Ocean, March 1939, at selected stations

Stations	Average pressure	Departure from normal	Highest	Date	Lowest	Date
	Inches	Inch	Inches		Inches	
Point Barrow.....	30.30	+0.15	30.88	12	29.72	20
Dutch Harbor.....	29.95	+ .25	30.74	31	28.58	27
St. Paul.....	29.99	+ .26	30.62	31	28.32	27
Kodiak.....	29.72	+ .03	30.42	31	29.00	4
Juneau.....	29.92	-.02	30.51	16	28.91	19
Tatoosh Island.....	30.06	+ .10	30.45	16	29.55	13
San Francisco.....	30.10	+ .04	30.41	1	29.79	9
Mazatlan.....	29.90	-.02	29.98	18	29.84	10, 27
Honolulu.....	30.01	-.03	30.19	28	29.83	20
Midway Island.....	30.02	-.05	30.30	30	29.65	24
Guam.....	29.86	-.04	29.94	27, 29, 30	29.80	6, 7, 10
Manila.....	29.87	+ .01	29.97	26	29.83	7, 8
Hong Kong.....	29.92	-.06	30.07	17	29.78	10
Naha.....	29.90	-.01	30.15	19	29.77	10
Titijima.....	29.98	-.02	30.18	9	29.74	22
Petropavlosk.....	29.71	-.03	30.21	16	29.41	6

NOTE.—Data based on 1 daily observation only, except those for Juneau, Tatoosh Island, San Francisco, and Honolulu, which are based on 2 observations. Departures are computed from best available normals related to time of observation.

Cyclones and gales of the extratropics.—As in the preceding February, the gale-producing cyclones of March were largely confined to the western waters of the North Pacific. East of the 175th meridian of east longitude, gales were few in number and for the most part localized. The stormiest region on the ocean is shown by reports to have been that lying between latitudes 30° and 35° N., longitudes 145° and 170° E., where gales were most frequent and, on the 24th and 26th, of greatest force, being of hurricane strength for short periods. A secondary region of storminess lay to the northward along the routes between the western Aleutians and the 150th meridian to the eastward of northern Japan. The upper steamship routes on the eastern half of the ocean were singularly free of high winds, with only one gale in excess of force 7 reported in open sea to the northward of the 40th parallel.

Cyclonic disturbances were frequent on western waters. The majority were of the type peculiar to the Aleutian Low, usually with centers in middle and high latitudes,

but often with their southern quadrants extended almost into the Tropics. These disturbances for the most part had no decided forward movement. The cyclone of the 1st to 8th, however, can be traced from a position near the east coast of China east-northeastward to about 35° N., 160° E., on the 3d, and thence generally northward to Kamchatkan waters on the 6th to 8th. On the 3d it caused gales of forces 8–9 that were experienced as far south as the twenty-eighth parallel, near longitude 149° E., and on the 4th, gales of forces 8–10 scattered within the region 30° to 50° N., 160° to about 170° E. In northwestern waters the central pressures of the cyclone fell below 29 inches on the 4th and 5th, accompanied by strong winds, rising locally to force 9. Thereafter the disturbance did not strongly affect the main steamer routes.

During the period 9th to 14th there was scattered stormy weather within the approximate area 33° to 50° N., 143° to 165° E. Most of the gales encountered were of forces 8–9, but a force 10 gale was experienced by the Danish motorship *Grete Maersk* on the 14th, near 43° N., 160° E.

From the 15th to 22d, although low pressure areas of great extent lay over eastern waters from the Hawaiian Islands northward, and continued to the westward of midocean, no winds of force as high as 8 were reported. On the 23d, however, in the east longitude area, pressure began falling more rapidly and gale winds set in locally on the 23d. From then until the 27th considerable storminess developed, particularly to the southward and eastward of the storm center, which was situated between about 42° to 50° N., 160° to 175° E., on those dates. Gales were reported principally from the region 30° to 35° N., 150° to 170° E., but isolated gales of force 9 occurred on the 24th and 25th as far to the eastward as longitude 165° W., near latitude 40° N. The most violent gales of the period were of short-lived hurricane force, encountered by the Norwegian motorship *Sangstad* near 34° N., 152° E., on the 24th, and near 34° N., 161° E., on the 26th. After the 27th storminess abated.

On the eastern side of the Pacific the only stormy period of the month was that of the 8th to 10th, in connection with a cyclonic disturbance central in American coast waters. Gales of forces 8–9 were experienced on the 8th and 9th along the eastern two-thirds of the Californian-Hawaiian routes, and a gale of force 10 was reported by the *Swiftsure Bank* Lightship, at the entrance to the Strait of Juan de Fuca, on the 10th.

Gales in the Tropics.—In the Gulf of Tehuantepec northerly winds of force 7 occurred on the 17th and 20th, and of force 8 on the 19th and 22d. A gale of force 8 was experienced by the U. S. S. *Detroit* on the 10th in 10°30' N., 89°42' W.

Fog.—Fog was reported on 8 days off the Washington coast; on 4 days off the Oregon coast; and on 5 days off the California coast. A greater expanse of ocean had fog than in any previous month since September 1938. The observations of fog were well distributed over both northern and middle routes through March, with the westernmost, on the 13th and 14th, near 41°–42° N., 160°–165° E. In open sea, fog was most frequent over the small region between 38° and 42° N., 150° and 155° W., where it was reported on 4 days. Dense fog occurred on the 27th west of Costa Rica in about 10° N., 88° W.